AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Withdrawn) A compound of formula (I)

Y^1-(NH-X^1-C=O)-(NH-X^2-C=O)-(NH-X^3-C=O)-(NH-X^4-C=O)-
(NH-X^5-C=O)-(NH-X^6-C=O)-Y^2 (I),

wherein Y^1 is either

a) a hydrogen or

b) a methyl group or

c) an acetyl group or

d) is characterized by a backbone consisting of a chain of 1 to 32 carbon atoms,

wherein (NH-X^1-C=O) is a basic amino acid residue, preferably

a) L-arginine or

b) D-arginine or

c) L-lysine or

d) D-lysine or

e) L-ornithine or

f) D-ornithine,

wherein (NH-X^2-C=O) is a cyclic, nonpolar amino acid, preferably

a) L-cyclohexylalanine or

b) D-cyclohexylalanine or

c) L-cyclohexylglycine or

d) D-cyclohexylglycine,

wherein (NH-X^3-C=O) is any arbitrary D- or L-amino acid, preferably

a) L-norleucine or

b) D-norleucine or

c) L-leucine or

d) D-leucine or

e) L-isoleucine or

f) D-isoleucine or

g) L-cyclohexylalanine or

h) D-cyclohexylalanine or

i) L-cyclohexylglycine or

j) D-cyclohexylglycine or

k) L-proline or

l) D-proline or

m) L-aspartic acid or

n) D-aspartic acid or

o) L-glutamic acid or

p) D-glutamic acid,

wherein (NH-X^4-C=O) is a cyclic amino acid, preferably

a) L-cyclohexylalanine or

b) D-cyclohexylalanine or

c) L-cyclohexylglycine or

d) D-cyclohexylglycine or

e) L-tyrosine or

f) D-tyrosine or

g) L-phenylalanine or

h) D-phenylalanine,

wherein (NH-X^5-C=O) is an amino acid with a polar side chain, preferably

a) L-glutamine or

b) D-glutamine or

c) L-ornithine or

d) D-ornithine or

e) L-glutamic acid or

f) D-glutamic acid or

g) L-arginine or

h) D-arginine or

i) L-lysine or

j) D-lysine or

k) L-asparagine or

l) D-asparagine or

m) L-aspartic acid or

n) D-aspartic acid or

o) is replaced by a chemical bond,

wherein (NH-X^6-C=O) is any arbitrary D- or L-amino acid, preferably

a) L-arginine or

b) D-arginine or

c) is replaced by a chemical bond,

wherein Y^2 is either

a) an OH group (the C-terminal amino acid has a terminal carboxylic acid group) or

b) an amino group (the carboxylic acid group in the C-terminal amino acid is replaced by an amide group) or

c) a hydrogen (the carboxylic acid group in the C-terminal amino acid is replaced by an aldehyde group) or

d) 7-amido-4-methylcoumarin (combined through the carboxylic acid group) or

e) para-nitroanilide (combined through the carboxylic acid group) or

f) is replaced by a connecting chain containing 1 to 35 atoms,

or is a molecule shortened at the C-terminus and/or at the N-terminus by no fewer than one amino acid, and pharmaceutically acceptable salts thereof.

2.- 16. (Canceled).

17. (Withdrawn) A medication, comprising one or more compounds according to claim 1 and a component selected from the group consisting of conventional carriers, auxiliaries, additives, and combinations thereof.

18. (Withdrawn) A diagnostic composition, comprising one or more compounds according to claim 1.

19. (Withdrawn) A method for thrombin inhibition, inhibition of fibrin formation, and for the inhibition of agglutinative thrombus formation in human and animals, which method comprises administering an effective amount of a compound according to claim 1.

20. - 22. (Canceled).

23. (Withdrawn) A method for thrombin inhibition in human and animals, which method comprises administering an effective amount of a compound according to claim 1.

24. (Withdrawn) A pharmaceutical composition comprising an effective thrombus-preventing amount of a compound according to claim 1 and a pharmaceutically acceptable carrier.

25. (Withdrawn) A diagnostic method for thrombin inhibition in humans and mammals, which method comprises administering an effective amount of a compound according to claim 1.

26. (Withdrawn) A compound of formula (II)

$$Y^1\text{-}(NH\text{-}X^1\text{-}C{=}O)\text{-}(NH\text{-}X^2\text{-}C{=}O)\text{-}(NH\text{-}X^3\text{-}C{=}O)\text{-}(NH\text{-}X^4\text{-}C{=}O)\text{-}(NH\text{-}X^5\text{-}C{=}O)\text{-}(NH\text{-}X^6\text{-}C{=}O)\text{-}Y^2 \quad \text{(II)},$$

wherein Y^1 is either

a) a hydrogen or

b) a methyl group or

c) an acetyl group or

d) is characterized by a backbone consisting of a chain of 1 to 32 carbon atoms,

wherein (NH-X^1-C=O) is a D- or L-amino acid, preferably

a) valine or

b) alanine or

c) leucine or

d) isoleucine or

e) norleucine or

f) aspartic acid or

g) glutamic acid or

h) serine or

i) threonine or

j) tyrosine or

k) arginine or

l) lysine or

m) ornithine or

n) is replaced by a chemical bond,

wherein (NH-X^2-C=O) is a D- or L-amino acid, preferably

a) alanine or

b) valine or

c) leucine or

d) isoleucine or

e) norleucine or

f) serine or

g) threonine or

h) tyrosine or

i) proline or

j) citrulline or

k) arginine or

l) lysine or

m) ornithine or

n) cyclohexylalanine or

o) cyclohexylglycine or

p) is replaced by a chemical bond,

wherein (NH-X^3-C=O) is any arbitrary amino acid, preferably

a) L-cyclohexylalanine or

b) D-cyclohexylalanine or

c) L-cyclohexylglycine or

d) D-cyclohexylglycine,

wherein (NH-X^4-C=O) is a small amino acid, preferably

a) L-proline or

b) D-proline or

c) is replaced by a chemical bond,

wherein (NH-X^5-C=O) is any arbitrary amino acid, preferably

a) L-tyrosine or

b) D-tyrosine or

c) L-phenylalanine or

d) D-phenylalanine or

e) is replaced by a chemical bond,

wherein (NH-X^6-C=O) is an amino acid with a basic side chain, preferably

a) L-arginine or

b) D-arginine or

c) L-lysine or

d) D-lysine or

e) L-ornithine or

f) D-ornithine,

wherein Y^2 is either

a) an OH group (the C-terminal amino acid has a terminal carboxylic acid group) or

b) an amino group (the carboxylic acid group in the C-terminal amino acid is replaced by an amide group) or

c) a hydrogen (the carboxylic acid group in the C-terminal amino acid is replaced by an aldehyde group) or

d) 7-amido-4-methylcoumarin (combined through the carboxylic acid group) or

e) para-nitroanilide (combined through the carboxylic acid group) or

f) is replaced by a connecting chain containing 1 to 35 atoms,

or is a molecule shortened at the C-terminus and/or at the N-terminus by not less than one amino acid, and pharmaceutically acceptable salts thereof.

27. - 49. (Canceled).

50. (Withdrawn) A medication, comprising one or more compounds according to claim 26 and a component selected from the group consisting of conventional carriers, auxiliaries, additives, and combinations thereof.

51. (Withdrawn) A diagnostic composition, comprising one or more compounds according to claim 26.

52. (Withdrawn) A method for thrombin inhibition, inhibition of fibrin formation, and for the inhibition of agglutinative thrombus formation in human and animals which method comprises administering an effective amount of a compound according to claim 26.

53. - 55. (Canceled).

56. (Withdrawn) A method for thrombin inhibition in humans and animals, which comprises an effective amount of a compound according to claim 26.

57. (Withdrawn) A pharmaceutical composition comprising an effective thrombus-preventing amount of a compound according to claim 26 and a pharmaceutically acceptable carrier.

58. (Withdrawn) A diagnostic method for thrombin inhibition in humans and mammals, which method comprises administering an effective amount of a compound according to claim 26.

59. (Withdrawn) A compound of formula (III)

Y^1-(NH-X^1-C=O)-(NH-X^2-C=O)-(NH-X^3-C=O)-(NH-X^4-C=O)-
(NH-X^5-C=O)-(NH-X^6-C=O)-Y^2 (III),

wherein Y^1 is either

a) a hydrogen or

b) a methyl group or

c) an acetyl group or

d) is characterized by a backbone consisting of a chain of 1 to 32 carbon atoms,

wherein (NH-X^1-C=O) is a D- or L-amino acid, preferably

a) valine or

b) alanine or

c) leucine or

d) isoleucine or

e) norleucine or

f) asparagine or

g) glutamine or

h) serine or

i) threonine or

j) tyrosine or

k) arginine or

l) lysine or

m) ornithine or

n) is replaced by a chemical bond,

wherein (NH-X^2-C=O) is a D- or L-amino acid, preferably

a) alanine or

b) valine or

c) leucine or

d) isoleucine or

e) norleucine or

f) serine or

g) threonine or

h) tyrosine or

i) proline or

j) citrulline or

k) arginine or

l) lysine or

m) ornithine or

n) histidine or

o) glutamic acid or

p) aspartic acid or

q) tryptophan or

r) cyclohexylalanine or

s) cyclohexylglycine or

t) is replaced by a chemical bond,

wherein (NH-X^3-C=O) is any arbitrary amino acid, preferably

a) L-cyclohexylalanine or

b) D-cyclohexylalanine or

c) L-cyclohexylglycine or

d) D-cyclohexylglycine,

wherein (NH-X^4-C=O) is a small amino acid, preferably

a) L-proline or

b) D-proline or

c) is replaced by a chemical bond,

wherein (NH-X^5-C=O) is any arbitrary amino acid, preferably

a) L-tyrosine or

b) D-tyrosine or

c) L-phenylalanine or

d) D-phenylalanine or

e) is replaced by a chemical bond,

wherein (NH-X^6-C=O) is an amino acid with a basic side chain, preferably

a) L-arginine or

b) D-arginine or

c) L-lysine or

d) D-lysine or

e) L-ornithine or

f) D-ornithine,

wherein Y^2 is either

a) an OH group (the C-terminal amino acid has a terminal carboxylic acid group) or

b) an amino group (the carboxylic acid group in the C-terminal amino acid is replaced by an amide group) or

c) a hydrogen (the carboxylic acid group in the C-terminal amino acid is replaced by an aldehyde group) or

d) 7-amido-4-methylcoumarin or (combined through the carboxylic acid group) or

e) para-nitroanilide (combined through the carboxylic acid group) or

f) is replaced by a connecting chain containing 1 to 35 atoms,

or is a molecule shortened at the C-terminus and/or at the N-terminus by not less than one amino acid, and pharmaceutically acceptable salts thereof.

60. - 81. (Canceled).

82. (Withdrawn) A medication comprising one or more compounds according to claim 59 a component selected from the group consisting of conventional carriers, auxiliaries, additives, and combinations thereof.

83. (Withdrawn) A diagnostic composition, comprising one or more compounds according to claim 59.

84. (Withdrawn) A method for thrombin inhibition, inhibition of fibrin formation, and for the inhibition of agglutinative thrombus formation in humans and animals which method comprises an effective amount of a compound according to claim 59.

85. - 87. (Canceled).

88. (Withdrawn) A method for thrombin inhibition in humans and animals, which method comprises administering an effective amount of a compound according to claim 59.

89. (Withdrawn) A pharmaceutical composition comprising an effective thrombus-preventing amount of a compound according to claim 59 and a pharmaceutically acceptable carrier.

90. (Withdrawn) A diagnostic method for thrombin inhibition in humans and mammals, which method comprises administering an effective amount of a compound according to claim 59.

91. (Currently amended) A compound of formula (IV)

Y^1-(NH-X^1-C=O)-(NH-X^2-C=O)-(NH-X^3-C=O)-(NH-X^4-C=O)-
(NH-X^5-C=O)-(NH-X^6-C=O)-Y^2 (IV),

wherein Y^1 is either

a) a hydrogen or

b) a methyl group or

c) an acetyl group or

d) is characterized by a backbone consisting of a chain of 1 to 32 carbon atoms,

wherein (NH-X^1-C=O) is a D- or L-amino acid, ~~preferably~~

~~a) valine or~~

~~b) alanine or~~

~~c) leucine or~~

~~d) isoleucine or~~

~~e) norleucine or~~

~~f) asparagine or~~

~~g) glutamine or~~

~~h) serine or~~

~~i) threonine or~~

~~j) tyrosine or~~

~~k) arginine or~~

~~l) lysine or~~

~~m) ornithine or~~

~~n) is replaced by a chemical bond,~~

wherein (NH-X^2-C=O) is a D- or L-amino acid, ~~preferably~~

~~a) alanine or~~

~~b) valine or~~

~~c) leucine or~~

~~d) isoleucine or~~

~~e) norleucine or~~

~~f) serine or~~

~~g) threonine or~~

~~h) tyrosine or~~

~~i) proline or~~

~~j) citrulline or~~

~~k) arginine or~~

~~l) lysine or~~

~~m) ornithine or~~

~~n) histidine or~~

~~o) glutamic acid or~~

~~p) aspartic acid or~~

~~q) tryptophan or~~

~~r) cyclohexylalanine or~~

~~s) cyclohexylglycine or~~

t) ~~is replaced by a chemical bond,~~

wherein (NH-X^3-C=O) is any arbitrary amino acid, ~~preferably~~ selected from the group consisting of

a) L-cyclohexylalanine, ~~or~~

b) D-cyclohexylalanine, ~~or~~

c) L-cyclohexylglycine, and ~~or~~

d) D-cyclohexylglycine,

wherein (NH-X^4-C=O) is an ~~small~~ amino acid, ~~preferably~~

~~a) L-proline or~~

~~b) D-proline or~~

~~c) L-azetidine-2-carboxylic acid or~~

~~d) D-azetidine-2-carboxylic acid,~~

wherein (NH-X^5-C=O) is an ~~aromatic~~ amino acid, ~~preferably~~

~~a) L-tyrosine or~~

~~b) D-tyrosine or~~

~~c) L-phenylalanine or~~

~~d) D-phenylalanine,~~

wherein (NH-X^6-C=O) is an amino acid with a basic side chain, ~~preferably~~

~~a) L-arginine or~~

~~b) D-arginine or~~

~~c) L-lysine or~~

~~d) D-lysine or~~

~~e) L-ornithine or~~

~~f) D-ornithine or~~

~~g) L-homoarginine or~~

h) ~~D-homoarginine,~~

wherein Y^2 is either

a) an OH group (the C-terminal amino acid has a terminal carboxylic acid group) or
b) an amino group (the carboxylic acid group in the C-terminal amino acid is replaced by an amide group) or
c) a hydrogen (the carboxylic acid group in the C-terminal amino acid is replaced by an aldehyde group) or
d) 7-amido-4-methylcoumarin or (combined through the carboxylic acid group) or
e) para-nitroanilide (combined through the carboxylic acid group) or
f) is replaced by a connecting chain containing 1 to 35 atoms,

or is a molecule shortened at the C-terminus and/or at the N-terminus by not less than one amino acid, and pharmaceutically acceptable salts thereof.

92. - 116. (Canceled).

117. (Currently amended) A medication, comprising the pharmacuetical composition according to claim 124 ~~one or more compounds according to claim 91~~ and a component selected from the group consisting of conventional carriers, auxiliaries, additives, and combinations thereof.

118. (Original) A diagnostic composition, comprising one or more compounds according to claim 91.

119. (Withdrawn) A method for thrombin inhibition, inhibition of fibrin formation, and for the inhibition of agglutinative thrombus formation, in humans and animals which method comprises administering an effective amount of a compound according to claim 91.

120. - 122. (Canceled).

123. (Withdrawn) A method for thrombin inhibition in human and animals, which method comprises administering an effective amount of a compound according to claim 91.

124. (Original) A pharmaceutical composition comprising an effective thrombus-preventing amount of a compound according to claim 91 and a pharmaceutically acceptable carrier.

125. (Withdrawn) A diagnostic method for thrombin inhibition in humans and mammals, which method comprises administering an effective amount of a compound according to claim 91.

126. (Withdrawn) A compound of formula (V)

Y^1-(NH-X^1-C=O)-(NH-X^2-C=O)-(NH-X^3-C=O)-(NH-X^4-C=O)-
(NH-X^5-C=O)-(NH-X^6-C=O)-Y^2 (V),

wherein Y^1 is either

a) a hydrogen or
b) a methyl group or
c) an acetyl group or
d) is characterized by a backbone consisting of a chain of 1 to 32 carbon atoms,

wherein (NH-X^1-C=O) is a D- or L-amino acid, preferably

a) valine or
b) alanine or
c) leucine or
d) isoleucine or
e) norleucine or
f) asparagine or
g) glutamine or
h) serine or
i) threonine or
j) tyrosine or
k) arginine or
l) lysine or
m) ornithine or

n) phenylalanine or

o) dichlorophenylalanine or

p) tetrahydronorharman-3-carboxylic acid or

q) 1,2,3,4-tetrahydroisoquinoline-3-carboxylic acid or

r) 4-phenylpiperidine-4-carboxylic acid or

s) thienylalanine or

t) phenylglycine or

u) p-nitrophenylalanine or

v) is replaced by a chemical bond,

wherein (NH-X^2-C=O) is a D- or L-amino acid, preferably

a) alanine or

b) valine or

c) leucine or

d) isoleucine or

e) norleucine or

f) serine or

g) threonine or

h) tyrosine or

i) proline or

j) citrulline or

k) arginine or

l) lysine or

m) ornithine or

n) histidine or

o) glutamic acid or

p) aspartic acid or

q) tryptophan or

r) cyclohexylalanine or

s) cyclohexylglycine or

t) is replaced by a chemical bond,

wherein (NH-X^3-C=O) is any arbitrary amino acid, preferably

a) L-cyclohexylalanine or

b) D-cyclohexylalanine or

c) L-cyclohexylglycine or

d) D-cyclohexylglycine,

wherein (NH-X^4-C=O) is a small amino acid, preferably

a) L-proline or

b) D-proline or

c) L-azetidine-2-carboxylic acid or

d) D-azetidine-2-carboxylic acid,

wherein (NH-X^5-C=O) is an aromatic amino acid, preferably

a) L-tyrosine or

b) D-tyrosine or

c) L-phenylalanine or

d) D-phenylalanine,

wherein (NH-X^6-C=O) is an amino acid with a basic side chain, preferably

a) L-arginine or

b) D-arginine or

c) L-lysine or

d) D-lysine or

e) L-ornithine or

f) D-ornithine or

g) L-homoarginine or

h) D-homoarginine,

wherein Y^2 is either

a) an OH group (the C-terminal amino acid has a terminal carboxylic acid group) or

b) an amino group (the carboxylic acid group in the C-terminal amino acid is replaced by an amide group) or

c) a hydrogen (the carboxylic acid group in the C-terminal amino acid is replaced by an aldehyde group) or

d) 7-amido-4-methylcoumarin or (combined through the carboxylic acid group) or

e) para-nitroanilide (combined through the carboxylic acid group) or

f) is replaced by a connecting chain containing 1 to 35 atoms,

or is a molecule shortened at the C-terminus and/or at the N-terminus by not less than one amino acid, and pharmaceutically acceptable salts thereof.

127. - 162. (Canceled).

163. (Withdrawn) A medication, comprising one or more compounds according to claim 126 and a component selected from the group consisting of conventional carriers, auxiliaries, additives, and combinations thereof.

164. (Withdrawn) A diagnostic composition, comprising one or more compounds according to claim 126.

165. (Withdrawn) A method for thrombin inhibition, inhibition of fibrin formation, and for the inhibition of agglutinative thrombus formation in human and animals, which method comprises administering an effective amount of a compound according to claim 126.

166.-168. (Canceled).

169. (Withdrawn) A method for thrombin inhibition in human and animals, which method comprises administering an effective amount of a compound according to claim 126.

170. (Withdrawn) A pharmaceutical composition comprising an effective thrombus-preventing amount of a compound according to claim 126 and a pharmaceutically acceptable carrier.

171. (Withdrawn) A diagnostic method for thrombin inhibition in humans and mammals, which method comprises administering an effective amount of a compound according to claim 126.

172. (New) The compound of claim 91, wherein (NH-X^1-C=O) is a substituent selected from the group consisting of:

a) valine,
b) alanine,
c) leucine,
d) isoleucine,
e) norleucine,
f) asparagines,
g) glutamine,
h) serine,
i) threonine,
j) tyrosine,
k) arginine,
l) lysine,
m) ornithine, and
n) replaced by a chemical bond.

173. (New) The compound of claim 91, wherein (NH-X^2-C=O) is a substituent selected from the group consisting of:

a) alanine,
b) valine,
c) leucine,
d) isoleucine,
e) norleucine,
f) serine,
g) threonine,
h) tyrosine,
i) praline,
j) citrulline,
k) arginine,

l) lysine,
m) ornithine,
n) histidine,
o) glutamic acid,
p) aspartic acid,
q) tryptophan,
r) cyclohexylalanine,
s) cyclohexylglycine, and
t) replaced by a chemical bond.

174. (New) The compound of claim 91, wherein (NH-X^4-C=O) is an amino acid selected from the group consisting of:
a) L-proline,
b) D-proline,
c) L-azetidine-2-carboxylic acid, and
d) D-azetidine-2-carboxylic acid.

175. (New) The compound of claim 91, wherein (NH-X^5-C=O) is an amino acid selected from the group consisting of:
a) L-tyrosine,
b) D-tyrosine,
c) L-phenylalanine, and
d) D-phenylalanine.

176. (New) The compound of claim 91, wherein (NH-X^6-C=O) is an amino acid selected from the group consisting of:
a) L-arginine,
b) D-arginine,
c) L-lysine,
d) D-lysine,

e) L-ornithine,

f) D-ornithine,

g) L-homoarginine, and

h) D-homoarginine.